

## ABSTRACT

5           A self-powered microthermionic converter having an internal thermal power  
source integrated into the microthermionic converter. These converters can have high  
energy-conversion efficiencies over a range of operating temperatures. Microengineering  
techniques are used to manufacture the converter. The utilization of  
an internal thermal power source increases potential for mobility and incorporation into  
10 small devices. High energy efficiency is obtained by utilization of micron-scale  
interelectrode gap spacing. Alpha-particle emitting radioisotopes can be used for the  
internal thermal power source, such as curium and polonium isotopes.